

**Amendments to the Claims:**

Please cancel Claims 1 and 3, amend Claims 2 and 4 to 8, and add new Claims 9 to 14 as set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Cancelled)
2. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 11, wherein said output means comprises at least one multiplexing circuit.
3. (Cancelled)
4. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 10, wherein ~~said the~~ digitized value is a one bit digital value.
5. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 10, wherein ~~said the~~ predetermined threshold is programmable using external programming means.
6. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 9, wherein said photon detector array is comprised of at least an 8x128 array of photo-detectors ~~detector~~ pixels.
7. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 9, wherein said photon detector array is comprised of at least a 128x128 array of photo-detectors ~~detector~~ pixels.
8. (Currently Amended) The photon detector module of Claim ~~[[1]]~~ 9, wherein said photon detector array is an InGaAs detector array.

9. (New) A photon detector module comprising:

a photon detector array comprising a plurality of photo-detectors for detecting photons and generating output signals in response to photon detection; and

a plurality of readout electronics integrated circuit chips, each readout electronics integrated circuit chip comprising a plurality of channels for receiving and processing the output signals generated by said photon detector array,

wherein said plurality of readout electronics integrated circuit chips are arranged in a stacked configuration with each readout electronics integrated circuit chip forming one layer of the stacked configuration, and

wherein said photon detector array is bonded to the stacked configuration and connected to the plurality of channels via a plurality of connections arranged on a lateral surface of the stacked configuration.

10. (New) The photon detector module of Claim 9, wherein each of the plurality of channels comprises:

amplifier circuitry for amplifying an output signal generated by said photon detector array;

differentiator circuitry for differentiating the amplified output signal;

comparator circuitry for comparing the differentiated output signal to a predetermined threshold;

analog-to-digital conversion circuitry for converting the compared output signal to a digitized value; and

a FIFO register for receiving and storing the digitized value.

11. (New) The photon detector module of Claim 10, wherein each readout electronics integrated circuit chip further comprises output means for outputting the digitized values stored in said FIFO registers of the plurality of channels.

12. (New) The photon detector module of Claim 9, wherein the plurality of connections arranged on the lateral surface of the stacked configuration are T-connects.

13. (New) The photon detector module of Claim 9, wherein said plurality of readout electronics integrated circuit chips are thinned.

14. (New) The photon detector module of Claim 9, wherein said plurality of readout electronics integrated circuit chips are bonded together in the stacked configuration with an adhesive.